Inequality in the Creative City:
Is There a Place for "Old-Fashioned" Institutions?

by

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INTRODUCTION[1]

Across the globe, Richard Florida's book *The Rise of the Creative Class* has captured the imaginations of economic developers, businessmen, and urban dwellers alike. Florida's central thesis is that the role of place has changed substantially as the U.S. economy continues its transition from traditional industry to high-tech and advanced services. Whereas people once followed jobs in traditional industries, jobs now follow highly mobile, creative people—people who increasingly base their location decisions not on job opportunities per se but on the urban amenities and cultural environment of a city. The creative theory therefore purports that the economic prosperity of a city is based not on traditional economic development theories—such as human capital theory, economic base theory or cluster theory, for example—but on a city's success in attracting and retaining key creative people (Florida, 2002).

Florida's idea has proven to be quite infectious: chasing the creative class has replaced cluster theory as today's ubiquitous development strategy. Cities across the globe have latched onto his creative roadmap, transforming old factories into swanky loft spaces, opening trendy coffee shops, and promoting local art galleries, all in an effort to please the fickle creative class. His three T's—talent, tolerance, and technology—are whipped off the tongues of city boosters, followed by quick recitations of where their city ranks on his Creativity, Bohemian, and Gay Indices.[2] Creativity, it seems, is rescuing the de-industrializing economy, and in the process is making cities—and not suburbs—the place to be.

Yet with all the hype surrounding the creative class strategy, a potentially troubling side effect has emerged: inequality. Florida himself acknowledges this (though with considerably less fanfare), and attributes it to an unfortunate, yet seemingly unavoidable "externality" of the rise of the creative class. According to Florida and his collaborator Kevin Stolarick, a strong correlation exists between the presence of the creative class in metropolitan areas and income inequality. Cities that rank high on the Creativity Index also rank high on the Inequality Index, a measure of occupational income premiums that Stolarick created (Florida 2002, 2005; Stolarick, 2003). The new economic hope for cities, it seems, also has a dark side.

According to Florida and Stolarick, this correlation reflects the fact that the creative class "outsources" much of the low-skill service activity, thereby generating a creative-noncreative division of labor (Florida, 2002; Stolarick, 2003). They are not alone in this observation, nor were they the first to write about it. Scholars in the 1980s, such as Saskia Sassen, noted that the "critical mass" of high-income professionals in America's

[1] I would like to acknowledge both Harvey Goldstein and Emil Malizia for providing data and involving me in the research that ultimately led to this paper, as well as Nichola Lowe for her suggestions and guidance.

[2] Florida relies on many such indices and rankings in his work. Talent, tolerance, and technology reflect the human capital and diversity of the local population, and the predominance of high-tech industry in the local economy, respectively; the Creative, Bohemian, and Gay Indices measures the representation of the creative class, artists, and gays in a metropolitan area (Florida, 2002).

global cities was leading to a rapid increase in the demand for low-end services—such as housekeepers, dog walkers and errand runners—that employed low-wage workers, often through the informal sector (Sassen-Koob, 1984; Sassen, 1990).

Yet while Sassen points to the explosion of the low-wage, informal, and often immigrant labor force as an opportunity for "new alliances" among urban workers to improve their own position (Sassen-Koob, 1984), Florida's solutions largely follow paternalistic strategies. To combat inequality, Florida claims that the creative class must entice the noncreative classes—i.e., those in the working and service classes—to join them in a creative utopia. In the process, noncreatives can leave the shackles of menial, mind-numbing labor behind in order to reach their full creative potential (Florida, 2005).

How might the creative class facilitate class mobility? As one example, Florida encourages creative management teams to transform their old-fashioned workplaces into "creative factories." Drawing on an earlier literature on High Performance Work Organizations, he proposes a firm-wide reorganization, especially in manufacturing industries, that would encourage greater worker participation in management and design processes, thereby giving workers at all levels an opportunity to develop and express their creative talents. As a second example of this creative-led solution, Florida relays a personal experience where he encouraged his own housekeeper to expand her skill sets from cleaning and dusting to home decoration and interior design. Through an informal mentoring process, he essentially enabled her to move into the creative class. These are both clear examples of how, in his view, inequality is best addressed through creative class leadership (Florida, 2002, 2005; Maliszewski, 2004; Peck, 2005).

Florida is quite clear as to what, in his opinion, will not work to reduce inequality: unions, and other social or political movements led by the noncreative classes. He essentially dismisses strategies that seek to strengthen the position of the noncreative classes relative to the creative class, or strategies that will cement noncreative categories of work (Florida, 2005; Peck, 2005). Related to this, he dismisses what he sees as antiquated or "obsolete" solutions, such as a rise in the minimum wage or extension of living wage campaigns. Instead, Florida seems to want the creative class to be all-encompassing: the creative class may be the problem, but it can be the solution as well.

But do these recommendations for creative-led actions accurately reflect the relationship between the creative class and inequality? Are new economy sources of inequality really that different from those exemplifying earlier economic periods? Is there sufficient evidence to support a dramatic shift in strategy formation that favors a Floridian approach, not just for urban redevelopment and renewal, but now for social mobility? Unfortunately, Florida's own analysis—itself based on simple correlations and with little reference to the expansive literature on inequality—fails to provide us with full answers to these questions. As a result, Florida essentially avoids one of the most disconcerting aspects of his creative world, leaving the policymakers who have embraced his development ideas with few tangible options for reducing the rising inequality potentially left in their wake.

This paper is an attempt to bring the traditional theories and frameworks of inequality analysis to Florida's work, through a literature review, statistical analysis, and in-depth policy analysis. The questions to be answered in this paper are threefold. First, is the creative class the sole predictor of inequality in metropolitan areas, or are alternative, well-studied factors and theories (such a skill-biased technical change, demand for college credentials, immigration, etc) better predictors of inequality? Second, are "old-fashioned" institutions—such as the minimum wage or union protections—really useless in combating today's inequality, or is there still a role for them to play in the creative economy? And third, what policies can local metropolitan areas undertake to lessen the impacts of inequality?

It should be stressed that this paper is not meant to be a wholesale dismissal of Florida's work; rather, it is an attempt to determine what causes the variation in the inequality index, and which policies would be appropriate to incorporate into the creative class framework in order to limit inequality. As evidenced by its popularity, creative development theories are here to stay—at least until the next popular development strategy comes along. For those that advocate for the interests of lower- and middle-income workers, dismissing the creative class strategies that are being followed in communities across the world will not help their cause. Rather, solutions that can incorporate *both* creative and non-creative solutions are the most likely to be both politically and financially feasible.

The structure of this paper will be as follows. Section II presents an in-depth review of Florida's writings on inequality. Section III includes a brief conceptual overview of inequality, as well as a review of the common casual factors that appear in inequality literature. Section IV presents the methodology for the statistical analysis, Section V provides an overview of the data used in the statistical models, and Section VI presents the results from the models. Using the results from the statistical analysis and applicable research to date, Section VII outlines potential policy solutions that could decrease the type of occupational wage inequality that exists alongside Florida's classes, and Section VIII offers a conclusion.

SECTION II

Just one year after the release of *The Rise of the Creative Class*, Kevin Stolarick created the Inequality Index, which captures an occupational pay ratio between the creative class and the noncreative classes. The creative class (what can perhaps be thought of as the "economic base" of Florida's new creative economy) is comprised of occupations which require workers to "think" for a living; the noncreative classes—the service and working classes—are in turn comprised of occupations where workers are not required to think for a living. Thus the latter groups are defined not as much by what they do, but by what they *don't* do: they don't think for a living, and are therefore not the driving force of the economy (Florida, 2002; see Appendix A for a list of the occupations in each of these classes).

In a piece released by Florida's consulting arm, Stolarick announced that there is a relationship between being a creative city and having an unequal workforce, proclaiming that, "inequality goes hand and hand with being a cutting edge, technologically innovative, creative region" (Stolarick, 2003). The higher the creative class percentage of the workforce, the more the creative class earns per year relative to the noncreative classes.

Florida and Stolarick maintain that the strong relationship between the creative class and inequality is due to the hectic lifestyle of the creative class, which is comprised of busy people who do not have the time or the inclination to perform life's daily tasks. Instead, the creative class relies on an "army of 'servants'" to cater to their everyday needs (Stolarick, 2003). Both Stolarick and Florida reason that it is this "massive functional division of human labor [that produces] the bulk of our income divide" (Stolarick, 2003; Florida, 2003).

As previously mentioned, this echoes earlier work by Saskia Sassen, who wrote that the economic transformation of the American economy away from manufacturing was producing a polarization of both occupations and wages in cities. Highly paid professionals in America's "global cities" drive demand for low-wage services; this new economic growth has replaced older growth, which was characterized by middle-income manufacturing jobs (Sassen-Koob, 1984). It also touches on the long-established theory of the secondary labor market (Doeringer and Piore, 1971; Osterman, 1999). Under this theory, the labor market is comprised of two groups: the first has high wages, benefits, and stable employment opportunities; the second has low wages, few benefits, and temporary or unstable employment opportunities. In this framework, the creative class would be the first group, and the noncreatives would be the second group relegated to poor employment opportunities. Yet both Sassen and Osterman relate these labor market woes not to the division of labor, but to the weak labor market institutions and worker alliances that govern the de-industrializing economy, driving them to the conclusions that these institutions and alliances need to be strengthened and broadened (Sassen-Koob, 1984, Osterman, 1999).

In contrast, and as was discussed in the introduction of this paper, Florida has made very few policy suggestions for fighting inequality. Florida writes that to improve the economic circumstances of the noncreatives we must first improve our education system, and then focus on increasing both creative and non-profit opportunities. Exactly how to do the former is left unanswered, since funding for educational programs remains a mystery. Florida writes that raising taxes would be a "tough sell" to the creative class, since they need their money to send their children to private schools, and since the libertarian creative class is distasteful to government policies or intervention (Florida, 2002, 2003; Maliszewski, 2004; Peck, 2005). As for increasing creative and non-profit jobs, this undoubtedly points to the recommendations overviewed in the introduction: having the creative class lead the noncreatives to creative factory work via the formation of High Performance Work Organizations, and to creative services, as with his housekeeper-turned-interior designer example.

At first glance, these policies seem similar to calls for the "upskilling" or "upgrading" of the workforce; factory workers are given the opportunity to move up the occupational ladder by becoming active members of a firm's extended "management" team, or in the case of housekeeping, develop new skills in high-end services in interior design. Furthermore, by giving workers who are most familiar with the means of production a voice, these sectors of the economy could become more dynamic and productive. Yet there is nothing in his suggestions that ensures that these productivity increases will translate into *higher wages* for the old noncreative classes, a common criticism of both High Performance Work Organizations and more recent productivity trends in the general economy (Shaiken, 2003; Bailey and Bernhardt, 1997; Dew-Becker and Gordon, 2005). Thus while Florida has suggestions for how these workers could be more creative, he has few suggestions as to how this new classification of their occupation will actually translate into higher wages.

It is therefore surprising that Florida rejects traditional ways of helping low-income workers move up the economic ladder towards higher wages and potentially creative jobs, such as unions, living wage campaigns and a rising minimum wage, which could help ensure that the productivity gains in the creative economy are in fact translated into higher earnings. While Florida says that the creatives must find ways to "invent a new form of collective action," he proposes no such thing for the noncreatives (Florida, 2002). Paul Maliszewski recounts a revealing discussion on CSPAN, in which Florida remarked that unions "are no longer relevant," and that we should "get beyond all these bureaucratic, large-scale, industrial institutions" (Maliszewski, 2004). This is perhaps because Florida seems more concerned with the fact that the noncreatives aren't creative, rather than the fact that the noncreatives are earning wages either at or below the poverty line. Florida at times bemoans the very existence of the noncreative classes, calling it a "great waste of creative capital" (Florida, 2005). Unfortunately, Florida never truly reconciles this thought with the fact that the creative class will continue to need an "army of 'servants,'" who they probably won't want to pay higher wages to, even if they do become "creative" through the creative mentoring processes suggested by Florida.

In a recent article that appeared in USA Today, Florida criticized Bush's proposal to emphasize job growth in mathematics and science, pointing out that these high-wage, high-skill jobs would not be an outlet for those who had lost their middle-income manufacturing jobs. Instead, Florida instructed the President to "[get] beyond the conventional wisdom that all service jobs are condemned to low pay and poor working conditions…" and instead learn from high-wage, high-benefit companies like Whole Foods and Best Buy (Florida, 2006). This is, in part, true: math and science funding won't directly help low-wage workers. But yet again, Florida fails to fully explain how a more creative curriculum will result in service companies agreeing to pay higher wages and benefits.

Besides mysteriously funded government programs and calls to behave like Whole Foods, Florida lays the fate of the noncreatives at the feet of the creative class, as seen from his creative mentoring suggestions. The creative class, he writes, should "…[offer] those in the other classes a tangible vision of ways to improve their own positions, either

by becoming part of the Creative Economy or coexisting with it… (Florida, 2002). In this, Florida is proposing what geographer Jamie Peck describes as the "creative trickle down" (Peck, 2005). Rather than being helped through strong labor market institutions, or compensated for being the unfortunate but necessary army supporting the creative class, the noncreatives are told to pull themselves up on their own creative bootstraps. As with most bootstrapping, there is no overarching policy framework to help the noncreatives along the way—short of being told to follow the path blazed by the creatives that have come before them.

On a basic level, the reasoning that Florida adopts—that the division between the creatives and the noncreatives creates inequality—makes sense. After all, we would expect people who are paid to "think" for a living to earn more than people who are not. But can this—the creative-noncreative division of labor—really be the *only* causal factor of today's inequality? In his work, Osterman points towards the decline of workplace norms, organized labor, and an increasingly volatile economy (Osterman, 1999). Sassen ultimately focuses on the relationship between the restructured economy and the explosion of the informal sector (Sassen-Koob, 1984; Sassen, 1990). And unlike Florida—who approaches the dark side of his creative world rather flippantly, referring to inequality as an unfortunate "externality"—both consider the bifurcation of the labor market to be a critical issue, reflecting deeper problems in the labor market and economy.

Policies aimed at improving the economic wellbeing of less-skilled workers must be developed, and in today's economy that means developing policies around the service sector. Unfortunately for Florida, Wal-Mart—the fastest growing retailer—is unlikely to follow the lead set by creative employer Whole Foods and offer substantially higher wages and benefits. When faced with this challenge, Florida ultimately makes a valid point: workers in low-end services are unlikely to be helped by increased political attention towards math and science—and for that matter, as I argue below, from growing political support for worker retraining programs. If anything, this realization reinforces the need for strong labor market institutions and proactive policies that go beyond simply calling for paternalistic action from the creative class and vague calls for a diffusion of the Whole Foods model.

In sum, Florida's assertion that inequality springs simply from a human division of labor essentially concludes that inequality is an unavoidable side-effect, and misses the larger points of *why* the inequality exists, *why* the pay ratio increases as the creative class increases, and *why* the creative-noncreative earnings gap varies from one region to another. It also misses the fundamental question of what can be done about it; since he misses the deeper causes of inequality, his policy solutions are ultimately misguided. Luckily for Florida, labor economists and sociologists have suggested a myriad of explanations that could help answer the question of what causes inequality, ultimately paving the path towards policies that could combat inequality.

SECTION III

Before moving onto the alternative factors that labor analysts have put forth as the causes of inequality, it is important to consider three questions central to inequality: what is it, why should we care about it, and what lessons can we learn from a brief look at historical inequality? While these may seem like fairly innocuous questions, each is critical to our approach to understanding both the problem of inequality and the possible policy solutions.

Inequality: What is it?

There are many ways to approach the issue of economic inequality. The most common way is to look at income or wage inequality.[3] Even here there are arguments as to what the most critical components of inequality are: the income of the wealthy versus the income of the poor, the declining position of the middle class, the plight of extreme poor in the face of such a wealthy nation, or the recent rise of the ultra-rich—those above the 99^{th}, if not the 99.9^{th}, percentile in the earnings distribution (Krueger, 2002). Ultimately, each shares a common thread: the study of the distribution of earnings across the gamut of America's workers, a distribution that is increasingly unequal.[4]

Why Should We Care?

The notion that inequality is a problem is not shared by all: George Mason University economist Russell Roberts, for example, claims that since the average poor person in America has a washing machine, a car, and access to health care, inequality is an over-hyped problem. He also remarks that since there is still an opportunity for upward social and economic mobility, the problem of inequality is vastly overstated (Boushey and Roberts, 2006). Unfortunately, such anecdotal arguments miss the larger point: the wages of the lowest-income Americans have declined in recent years. In contrast, the wages of the 99.9^{th} percentile have exploded, all while the middle-class is increasingly being pushed towards the bottom (Dew-Becker and Gordon, 2005; Piketty and Saez, 2003).

The strongest arguments calling for a reduction in inequality tend to center around social and economic justice, yet also pull from religious and philosophical traditions of the need to care for all members of a society.[5] These arguments tend to reflect the notion that modern, wealthy, democratic societies should not have a permanent underclass, notions backed up by millennia of philosophic and religious thought.

Yet there are also economic arguments to be made for reducing inequality. As economist Heather Boushey states, inequality—and in particular the declining wages of those at the

[3] A third, wealth inequality, will not be considered in this paper.

[4] For a brief summary of the most common statistical ways to measure inequality, see Levy and Murnane (1992).

[5] For a brief yet thoughtful discussion of each of these, see Krueger (2002).

bottom end of the income distribution—means that consumption for lower- and middle-income Americans may be put under pressure and ultimately decline. Americans are currently spending money they don't have (going into debt, in other words), a trend that cannot continue to support the economy forever. Given that final goods consumption is a key economic driver for this country, rising inequality could pose a serious problem for long-term economic stability (Boushey and Roberts, 2006).

Finally, there are political and security concerns associated with inequality. Alan Krueger suggests that the influence of an increasingly small, wealthy minority in politics, for example, can lead to very un-democratic outcomes (Krueger, 2002). At an extreme, a look at the political and social consequences of vastly unequal societies (including several countries in the Middle East and Africa, as well as extremely poor urban pockets in Europe, illustrated by the recent riots in Paris, France), provides a startling picture of the devastation that can occur when huge swaths of the population are underemployed and poor. Alan Greenspan put this eloquently, when he said in 2005,

> "In a democratic society, a stark bifurcation of wealth and income trends among large segments of the population can fuel resentment and political polarization. These social developments can lead to political clashes and misguided economic policies that work to the detriment of the economy and society as a whole" (Quoted in Boushey and Russell, 2006).

Thus though the reasons we should care about inequality reach back to the foundations of society in religion and philosophy, they also have very real repercussions for the sustainability of our economy and stability of our society—and should therefore not be brushed aside.

Are There Lessons from our Past?

Examining past eras of inequality—and more importantly, the times and events that occurred when inequality reversed course—can add insight into the causes of inequality, and the possible policy solutions that could help alleviate inequality. Formal studies of income inequality typically focus on the time period between 1913 (the start of the federal income tax) and the present. These studies suggest two watersheds: World War II and the early 1970s. Each of these marked a reversal in inequality: inequality declined during and after World War II, and increased dramatically after the early 1970s.[6]

The post-War decrease in inequality appears to be unique in American history, due to its severity and length. From the onset of World War II to the early 1970s, the share of income earned by the top percentiles of the earnings distribution declined substantially (Piketty and Saez, 2003). This is due in part to the fact that all workers—throughout the entire wage distributions—seemed to be sharing in the post-war gains in real wages (Juhn, Murphy, and Pierce, 1993; Ryscavage, 1999).

[6] For more in depth analysis of historical inequality, see Goldin and Margo (1992), Levy and Murnane (1992), Piketty and Saez (2003), and Ryscavage (1999).

Economists seem to have largely agreed on four major mid-century trends that explain the startling pattern of equalization throughout the post-War period. First, the steep increase in demand for semi-skilled labor in the wartime factories (relative to skilled, craft labor) decreased the skill premium, thereby decreasing inequality. Second, the National War Labor Board set wages throughout the war in occupational brackets, and had to approve wage increases, all of which led to the compression of wages, particularly in the upper portion of the wage distribution. Third, and in terms of the long-term effects of the wartime compression, the steep increase in factory jobs and further industrialization occurred when unionization levels were at their highest, assuring American workers of high-paying, low-skill jobs. Fourth, and harder to quantify, the cultural and corporate norms that the War Board instilled may have led to long-term equalization in pay (Goldin and Margo, 1992; Piketty and Saez, 2003; Osterman, 1999). These four factors assured that the post-War, "Fordist" period in the American economy was one of prosperity across the entire income distribution.

What is perhaps most striking about these factors is how much they were driven by both governmental and institutional factors. Unionization, the War Board, and cultural norms are all outside the easily quantifiable factors that most modern economists include in their econometric models, and it is these econometric models that dominate the debate about the causes and potential policy solutions to inequality. Thus, this quick look at the post-war equality suggests that the role of government and labor institutions in limiting inequality should not be overlooked, and also suggests that while econometric models may be useful, qualitative, as well as intangible factors, like norms, should not be overlooked.

By 1973, however, the long-lasting increases in income across the distribution had ended. Income declined at the bottom end of the distribution, and began to rise at the top—the income controlled by the very top of the income distribution is fast approaching levels not seen since the Great Depression, clearly ending the "golden era" of equality (Goldin and Margo, 1992; Piketty and Saez, 2003). Yet while there is a general consensus around the factors that led to the Great Compression of income during and after World War II, economists rally around few such points when it comes to the widening of inequality that has occurred over the past thirty years. Six factors emerge from the literature as being influential and potential causal factors: the supply of educated workers and immigrants; changes in the demand for workers due to technical change and international competition; and changing institutional structures such as unionization and the minimum wage. Yet the extent to which each of these has influenced both skilled and unskilled workers (rough equivalents to Florida's creative and noncreative workers) remains unanswered.[7] Each of these six factors will be briefly discussed in the literature review that follows.

[7] Florida's Inequality Index—which will be further explored in Section V and in Appendix B—is essentially a ratio of income across occupational lines (creative to noncreatives).

Supply of Skilled Workers due to Increasing College Education

Labor analysts have attributed part of the increase in income inequality to a rising pay gap between educated and less-educated (or skilled and less-skilled) workers. This has led many economists to suggest that there is a shortage of educated workers or what is often referred to as a "skills mismatch" in the economy. This hypothesis, however, is not shared by all.

Faced with the evidence of the rising wages of educated workers with respect to less-educated workers, a simple supply and demand model of wages would suggest that the supply of educated workers has been falling over time (holding demand constant). In fact, the percentage of college graduates has quadrupled since 1940. In other words, both the supply of educated workers *and* their wages have increased.

How is this possible? Labor analysts point to a larger shift in demand for educated workers, suggesting that the supply of educated workers has not been the dominant force in explaining the post-1970s increase in the educational wage premium. In other words, an explosive increase in *demand* for educated workers has continued to outpace their ever-increasing supply (Murphy and Welch, 1993; Bound and Johnson, 1992; Katz and Autor, 1998; Levy and Murnane, 1992; Deere, 2001).[8] Thus the argument that inequality is caused by a shortage of educated workers has little merit.

Some economists have argued that the large supply of college-educated workers may have led to other causal factors of inequality. Daron Acemoglu, for example, suggests that the rapid increase in college graduates may have *induced* new forms of technology or managements that are biased towards educated workers, making the economy less favorable to less-skilled workers (Acemoglu 2001). These theories would suggest that having a large portion of college-educated workers would actually *increase* inequality, rather than decrease it.

Supply of Less-Skilled Workers due to Immigration

A second focus of study for labor analysts is the role of immigrant labor on inequality. While clearly not without controversy, the argument is that a rise in immigration increases in the supply of less-educated and less-skilled Americans, since, on average, they have fewer years of schooling than native-born Americans (Borjas, Freeman, and Katz 1997; Reed 2001).[9] Therefore, one may expect wages for less-skilled workers to be

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[8] This is not to say that the role of supply is not important. Supply has been dominant in at least one historical period. The supply of baby-boom college graduates jumped dramatically in the 1970s, in part induced by Vietnam-era college draft deferments. This glut of college graduates may have been enough to keep down the wages of skilled workers in the early 1970s, and may also have masked the beginnings of increasing demand for educated workers (Bound and Johnson, 1992; Katz and Autor, 1998; Levy and Murnane, 1992).

[9] Immigrant education levels are bimodal: immigrants are more likely to have less than nine years of schooling than native-born Americans, but are also more likely to have higher levels of education (Borjas, Freeman, and Katz, 1997). Since the former far outweighs the latter, immigrants are generally—and perhaps too simplistically—classified as "less-skilled" or "less-educated."

driven down by an ever-increasing supply of less-skilled, immigrant workers. At the same time, this larger pool of less-skilled workers is expected to drive up the wages of skilled workers in the area; as the population grows due to the influx of immigrants, the demand for skilled services—in fields such as education and medicine, for example—will also rise. Without a corresponding supply increase in skilled labor, the wages in skilled occupations will increase. In theory, then, the wage gap between less-skilled and skilled workers could increase due to two related events: the increase in supply of less-skilled labor, and in the increase in demand for skilled labor. In the short term, therefore, immigration should be associated with an increased wage premium, leading to greater inequality (Reed 2001).

However, theory also predicts that over the long term: production should move to the places where immigration is highest to take advantage of the low wages; unskilled workers (either native or immigrant) should out-migrate to get higher wages; and skilled workers should in-migrate to take advantage of higher wages. Thus in the long run, theory suggests that the wage premium should remain unchanged (Reed, 2001).

Yet the role of immigration in statistical studies has had conflicting results, largely depending on the geographic area that is studied. Most national studies suggest that immigration has been a relevant, though minor factor, and one that really only has a detrimental effect on the wages of those with the lowest levels of education such as those with less than a high school degree (Borjas, Freeman, and Katz, 1997; Cline, 2001). Several regional studies, on the other hand, have found much larger negative impacts of immigration. Richard Topel, for example, found that immigration—particularly in the western region of the US—had considerable detrimental impacts on inequality (Topel 1994). In her regional study, Deborah Reed found that immigrants could account for between one-quarter to one-half of the regional variation in inequality (Reed, 2001). Case study evidence, such as that compiled by Christian Zlolniski in Silicon Valley, suggests that the working arrangements facilitated by immigration—such as the informal sector, which often pays below the minimum wages—could be the reason for these regional effects (Zlolniski, 1994; Sassen, 1984).

Demand Changes due to Technological Change

As previously discussed, income inequality may be on the rise because the demand for more educated workers has outstripped supply. The most plausible theoretical explanation put forward by labor analysts relates to skill-biased technical change. Since we assume that the two groups in our model (skilled/educated/creative and less-skilled/less-educated/noncreative) are not perfect substitutes for each other, changes in technology can be assumed to have differing impacts. Technical changes (in particular those associated with computerization and other innovative production technologies) have tended to increase the *demand* for educated workers relative to less-educated workers (Katz and Autor, 1998; Bound and Johnson, 1992).

New technologies complement the existing skill sets of educated workers, giving educated workers a comparative advantage over less-educated workers in occupations

utilizing new technologies. While the marginal product of skilled workers increases with the utilization of new technologies, the marginal product of unskilled workers decreases with the utilization of new technologies. This in turn decreases the demand for unskilled labor, and increases the demand for skilled labor. Recent technological innovation may therefore have contributed to increasing wage inequality by driving down the wages of less-skilled labor and increasing the wages of skilled labor (Krussel et al, 2000; Autor and Katz, 1998).

As discussed in a previous section, there is an additional hypothesis that posits that it is the very increase in the supply of skilled workers that has exacerbated the wage gap. Acemoglu writes that firms develop or implement new technologies only when it is profitable to do so; without a sufficient supply of skilled workers to use the technologies, or when technology is expensive, it is not profitable to do so. Under this lens, the post-war decrease in the cost of technology and the dramatic increase in skilled workers led to circumstances in which it has been profitable for firms to upgrade their technologies, leading them to further develop skill-biased technology (Acemoglu, 2001).

Demand Changes due to International Trade

The changing value of the dollar in the 1980s and the resulting decrease in demand for US-manufactured goods, relative to imports, has also been put forward as a contributing factor to the decline in relative demand for less-skilled workers (particularly in the manufacturing sector) (Levy and Murnane, 1992). The extent to which international competition (or globalization) has influenced inequality, however, has probably been the most hotly debated aspect of the inequality puzzle. Arguments concerning the extent of trade's role in inequality largely center around the statistical methods used in the analysis.

Many researches conclude that trade has not been a major factor in inequality, particularly when compared to skill-biased technological change or even institutional factors (Borjas, Freeman, and Katz, 1997 or Cline, 2001, for example). In general, the growth of the economy over the long-term that trade allows (due to cheaper imported goods from comparative advantage) is expected to offset any short-term dislocation problems that may be associated with increased international competition. Distributional changes in income (between skilled and unskilled labor, for example) are not a direct result of the trade, but rather of the result of changes in demand between sectors (Richardson, 1995).

UK-economist Adrian Wood, however, has argued that the majority of the studies examining international trade have underestimated domestic effects due to methodological flaws, and have therefore underestimated their impact on widening inequality. He dissents from the majority-held opinion that trade does not lead to a significant amount of inequality, and instead finds that trade can account for a substantial amount of inequality (Wood, 1995). Sassen, too, writes that it is this global restructuring of the economy and subsequent off-shoring of stable, middle-income manufacturing jobs that has led to the bifurcation of the urban labor market between low-wage service jobs and high-wage professional service jobs (Sassen-Koob, 1984; Sassen, 1990). Finally,

even though he agrees with the majority-held opinion that trade is not a leading cause of inequality, J. David Richardson points out that many econometric models (which typically use a general equilibrium model) often do not take into account the "subtle and chronic" transitional effects of the inter-regional or inter-sectoral immobility of labor (Richardson, 1995); these are potentially significant factor in regional studies, particularly in sectorally less-diverse regions or where worker skills are not transferable (automobile workers in Detroit, for example).

Changes in Labor Market Institutions

The decline of unionization among low-skilled American workers may also be a factor in the widening inequality. The "Great Compression" between 1940 and 1973 occurred when the labor movement was at its strongest, both in size and clout. In 1945, 35 percent of the US workforce was unionized, an all-time high; by 1960 that number had fallen to 29 percent, fell again to 25 percent by 1970 (Fortin and Lemieux, 1997). The 1980s brought about the largest decreases in unionization: union representation fell to 16 percent by 1989, and now rests around 12 percent.

Most researchers have pointed to unionization as a contributing factor to increasing inequality, though the extent of its influence remains debated. Most claim that deunionization explains only a small portion of the increase in inequality; as with trade, deunionization is considered small when compared to skill-biased technical change (Blackburn, Bloom, and Freeman 1990; Freeman, 1993; Cline, 2001). Others, however, point to unions as being much more important, especially when they focus on the role of unions for the very low-skilled or very low-educated. David Card writes that deunionization can account for fifteen to twenty percent of the increase in male inequality, while Nicole Fortin and Thomas Lemieux find that the 1980s deunionization in the US can explain a full thirty percent of the increase in wage inequality (Card, 2001; Fortin and Lemieux, 1997).[10]

As with unionization, the real minimum wage has also declined over the same period that the educational/skilled wage gap has increased, and has been theorized to be a causal factor. Relative to technological change and declining unionization, however, most econometric models suggest that the falling real minimum wage has not been a strong contributor to rising inequality (Horrigan and Mincy, 1993; Cline, 2001). This is in part a result of the fact that while many Americans have low earnings, few actually earn the minimum wage (Blackburn, Bloom, and Freeman, 1990). William Cline, for example, has estimated that the declining real minimum wage accounts for only about five percent of the increase in the skills wage premium, compared to fifteen percent from declining unionization (Cline, 2001).[11] However, Dinardo, Fortin and Lemieux find that the

[10] Both authors note that deunionization has little effect on earnings inequality for women, who tend to be less unionized than men.

[11] Both Horrigan and Mincy (1993) and Fortin and Lemieux (1997) find that an increase in the minimum wage would have a much larger impact on reducing female inequality, since women are more likely to earn the minimum wage than men.

declining minimum wage has had a substantial effect on inequality (Dinardo, Fortin and Lemieux, 1996)

Summary of Factors

The literature presents compelling reasons for the increase in wage inequality. The increase in the share of college-educated adults may have induced new business forms or technologies more amenable to educated workers, and immigration has had local effects on inequality by increasing less-skilled, less-educated workers willing to work for substantially lower wages or in informal sectors. The demand for workers has shifted from less-educated, less-skilled workers to educated, skilled workers, which could be driven by technical change and/or international trade. Finally, declining unionization rates have lowered worker bargaining power, and the falling real minimum has failed to ensure that the lowest-paid Americans continue to see their incomes rise relative to the highest-paid workers.

The literature also provides a framework to test Florida's hypothesis: that the creative class is the largest factor explaining inequality in a metropolitan area, and that other factor put forth by economists can explain inequality in the creative economy.

SECTION IV: METHODS

Three multivariate models are used in this statistical analysis. The fist of the three models includes inequality variables from the counter-arguments to Florida (those reviewed in the previous section, that is) and control variables. The second model includes Florida's predictors and the control variables.[12] The third model combines the counter-argument variables, Florida's variables, and the control variables. Through analysis of individual variables in each of the three models and model comparison tests, this structure should allow us to determine whether Florida's theories or the economic counter-arguments—or some combination of the two—best predict inequality in a region.

The models include observations for 264 metropolitan statistical areas (MSAs) in the United States.[13] The independent variables in the models span years from 1986 to 2003, and the dependent variable for wage inequality is from 2004. Though the majority of the independent variables were measured in years prior to the dependent variable, the models remain cross-sectional and cannot rigorously test time order. Causal models could be specified and tested in further research with more comprehensive time series data.

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[12] I would like to thank both Richard Florida and Kevin Stolarnick for providing their data.

[13] The metropolitan statistical areas follow 1999 guidelines, as defined by the U.S. Census Bureau. Primary metropolitan statistical areas (PMSAs) and New England consolidated metropolitan areas (NECMAs) are considered equivalent to metropolitan statistical areas (MSAs). Of the 318 total MSAs, PMSAs, and NECMAs, two were excluded (Honolulu, Hawaii and Anchorage, Alaska) due to their economic and geographical isolation. Only 264 were used in the regressions due to missing values.

SECTION V: DATA

The dependent variable used in the models is Stolarick's inequality index. The index is a ratio of the average income of the creative class to the average income of the noncreative classes in a metropolitan area, and therefore measures an occupational based inequality between the classes. Unfortunately, since the inequality index is derived from the earnings averages of each of the occupational classes, it cannot capture detailed inequality across the entire earnings distribution in a metropolitan area, nor can it capture inequality within Florida's classes. Yet examining inequality through the lens of Florida's inequality index is useful, since policymakers instituting Florida's creative class strategies may think of their labor market as being comprised of creative and noncreative workers. Therefore, the results of these models will be directly compatible with the strategies that are being instituted locally.[14]

The independent variables in the models are driven both by Florida's views on the causes of inequality, and the economic counter-arguments to Florida's views. Variables representing education, immigration, international trade, skill-biased technical change, de-unionization, and the declining minimum wage are all represented. Florida's theory – that the presence of the creative class is the sole cause of inequality – is also represented in the model.

The percentage of the adult population with a college education (coll90) in a metropolitan area represents the supply of college-educated workers. Though original inequality theories hypothesized that this variable would have a negative coefficient, contemporary research suggests that the supply of college-educated adults will have a *positive* coefficient (Acemoglu 2001).

A variable for foreign-born residents in an MSA (foreignborn) represents the immigration hypothesis, and is expected to have a positive coefficient. Since manufacturing is the sector most likely to suffer from international trade, a variable representing the change in manufacturing earnings in an MSA between 1986 and 1997 (mfge8697pc) represents the international trade hypothesis. This variable is expected to have a negative coefficient, since MSAs that have seen the largest decline in manufacturing are expected to have high levels of inequality.

Unfortunately, skill-biased technical change is much harder to quantify, particularly at the MSA level. Florida's TechPole variable (techpole90), which measures high-tech industrial output, is a good indicator of skill-biased technical change at the MSA level, since high-tech industries are likely to be skill-biased. TechPole is expected to have a positive coefficient.

Union representation numbers are not readily available at the MSA level, so state union representation levels (unionrep90) have been used to represent the de-unionization hypothesis. While this is not a perfect representation of the metropolitan area itself, the

[14] The occupations that define Florida's classes, as well as a more detailed explanation of the calculation of the index, can be found in Appendices A and B.

inclusion of state-level data captures both statewide labor laws (such as those governing worker rights and whether the MSA is in a right-to-work state), as well as the "threat-effect" of unionization that may or may not be felt by companies in an MSA.[15] State minimum wages (mw) have been included to represent the declining minimum wage hypothesis, since some states may have combated the declining minimum wage by the instigation of their own, higher wage. Both unionization and minimum wage variables are expected to have negative coefficients, since they raise the wages of the lowest-skilled workers relative to the highest-skilled workers.

Florida's Creative Class variable represents the dominance of creative occupations in an MSA, and has been included to reflect Florida's hypothesis. The Creative Class (cc98) is expected to have a positive coefficient. The Bohemian Index (bohoidx90) has been included as a control for the creative class, since the bohemian index should capture the majority of the low-wage creative occupations. The bohemian index is also expected to have a positive coefficient.

Two controls have been included in the models. The population of the MSA in 1990 (pop90) has been included to control for possible population and agglomeration effects, and a variable representing the number of MSAs within 30 miles of the target MSA (nmsa30) has been included to control for possible spillover effects.

For more in-depth descriptions of the variables and their source information, see Appendix B. Descriptive statistics and a summary of the hypothesized directions of the variables are presented in Appendix C.

SECTION VI: RESULTS

The results from each of the three models are presented in Tables 1-3. Though the discussion that follows will focus on each of the three models, the conclusion is that Florida's creative class is not the only predictor of regional inequality, nor is it the largest predictor of inequality—instead, a variety of factors appear to be influential in determining regional inequality.

Full results from the first model, containing only economic counter-argument and control variables, appear in Table 1. The model is significant and explains over half of the variation of the dependent variables, as evidenced by the F-value of 44.02, and adjusted R^2 of 0.57. The model has a skewness of 0.007 and kurtosis of 3.37. Using these values in a Jarque-Bera test does not allow us to reject the null hypothesis, meaning the model has a normal distribution and that the results from the model are robust.

[15] Two schools of thought exist on the effects of unionization. The "threat-effect" school suggests that higher levels of unionization will make non-unionized firms to act like unionized firms, in order to hold off unionization. The "crowding" school suggests that unionized firms limit employment, leading to a higher supply of workers for non-unionized firms to pull from. The threat-effect leads to higher wages in non-unionized firms, but the crowding effect leads to lower wages in non-unionized firms. Though considerable debate remains, David Neumark and Michael Wachter suggest that the threat effect holds in metropolitan areas due to large, dense, and highly-visible unions (Neumark and Wachter, 1995).

With the exception of the control variable for spillover effects (nmsa30), all of the variables were significant. All of the confidence intervals for the significant variables were consistent with the hypothesized sign, meaning that we are 95 percent confident that the coefficients of the variables will have their hypothesized sign if we had drawn different samples from the population of MSAs.

The standardized coefficient associated with college-educated adults (coll90) is the largest in the model at 0.54, making the presence of college-educated adults the most important determinant of regional inequality.[16] The positive coefficient presents further evidence to the hypothesis that there is not a shortage of college-educated adults. Instead, the positive coefficient suggests that their presence may allow for business methods or technologies that are biased in favor of educated or skilled workers, as Acemoglu suggests (Acemoglu, 2001). While the latter point could suggest that college-educated adults and the variable for skill-biased technical change are measuring the same concept, an F-test preformed on the two variables—with the null hypothesis that the effects of the two variables are one and the same—is soundly rejected with a p-value of 0.000.

Table 1: Model 1 Economic Counter-Argument Variables

Variables	Coefficient	Standardized Coefficient	95% Confidence Interval		VIF
coll90	0.3488**	0.5369	0.2932	0.4044	1.15
foreignborn	0.1376**	0.2153	0.0739	0.2013	1.56
mfge8697pc	-0.0389**	-0.1641	-0.0581	-0.0196	1.03
techpole90	0.0028*	0.1113	0.0002	0.0054	1.62
unionrep90	-0.001**	-0.1596	-0.0016	-0.0004	1.34
mw	-0.011**	-0.1695	-0.0171	-0.0049	1.40
nmsa30	-0.0053	-0.0559	-0.0138	0.0032	1.27
pop90tt	0.0057*	0.1532	0.0018	0.0096	1.71
constant	0.3194**		0.2857	0.3531	
Sample Size	264				
F-value	44.02**				
R2	0.5800				
Adjusted R2	0.5668				
p<.05=* p<.01=**					

Immigration, as represented by the variable foreignborn, has a positive coefficient, as expected. Yet the standardized coefficient of 0.22 makes immigration the second largest predictor of inequality. This finding adds credence to the theory that immigration significantly increases the supply of less-skilled labor, and is consistent with regional models that find that high levels of immigration are associated with higher levels of inequality (Reed, 2001, Topel, 1994).

Though the standardized coefficients for the two institutional variables, -0.17 for the minimum wage (mw) and -0.16 for unionization (unionRrp90), pale in comparison to those associated with college education and immigration, they both have larger effects

[16] Standardized coefficients essentially remove the effect of each variable's scale, allowing us to directly compare the importance of a variable to the remaining variables in a model.

than the skill-biased technical change variable, and the minimum wage variable is larger than the effects of international trade. This finding suggests that institutional factors are as important as the competitive factors, as DiNardo, Fontin, and Lemieux (1996) and Card (2001) have found (among others). The findings may also suggest that the role of labor market norms—which govern socially "acceptable" employment arrangements and are often informally set by these institutions—may be a critical factor in reducing inequality (Osterman, 1999).

International trade, represented by the change in manufacturing earnings variable mfge8697pc, was negative as expected. International trade was the fourth largest factor in determining regional variances in inequality besides the control variables—its standardized coefficient was -0.16. As neither a strong nor weak predictor of inequality, trade's middle-of-the-road performance reflects a position held neither by trade proponents or dissenters (see Wood, 1995 or Borjas, Freeman, and Katz, 1997). Instead, trade falls someplace in between the two views, reflecting the views of Cline (2001). In terms of policy, the finding suggests that protectionist policies would have limited benefits for inequality.

As expected, skill-biased technical change, as represented by the variable TechPole, has a positive coefficient. This is consistent with the majority of the research, which suggests that skill-biased technical change has been a cause of inequality. With a standardized coefficient of 0.11, however, trade is the smallest predictor of inequality—behind the control variable population. This is not consistent with the literature, which suggests that skill-biased technical change has been one of the leading factors—if not the largest factor. This could be due to the fact that, as previously mentioned, the TechPole variable is not a perfect representation of skills-bias. But TechPole's lack of sizeable influence could also indicate that skills-bias is more of a factor in time series analysis than in cross-sectional analysis.

Model 2 includes the creative class variable (cc98), and the three control variables (full results are shown in Table 2). The model is significant, with an F-value of 58.66. Given that the model has only four variables (three of which are control variables), the adjusted R^2 is surprisingly high at 0.47, meaning that the model explains almost fifty percent of the dependent variable's change. Though the adjusted R^2 for Model 2 is lower than the adjusted R^2 in Model 2, the Model is a better model, as determined by the Bayesian Information Criterion Test (BIC Test). Rather than determining explanatory power, however, this could be a reflection of model specification: the traditional model (Model 1) contains eight independent variables, while Florida's model (Model 2) contains just four variables, and the BIC Test penalized heavily for over-specified models.

The creative class variable in Model 2 is significant, and has a standardized coefficient of 0.52, the largest in the model. This is a very large standardized coefficient, regardless of the fact that the model has only one explanatory variable. Two of the control variables—the bohemian index and population—are also significant. The model suggests that Florida may, in fact, have a credible theory—the creative class could, in fact, be the largest predictor of regional inequality.

Table 2: Model 2 Florida's Variables					
Variables	Coefficient	Standardized Coefficient	95% Confidence Interval		VIF
cc98	0.4808**	0.5154	9.9900	0.0000	1.31
bohoidx90	0.0209**	0.1827	3.5200	0.0010	1.33
nmsa30	-0.0028	-0.0302	-0.6700	0.5040	1.00
pop90tt	0.0053*	0.1419	2.7900	0.0060	1.28
constant	0.1706**		13.1600	0.0000	
Sample Size	264				
F-value	58.66**				
R2	0.4753				
Adjusted R2	0.4672				
p<.05=* p<.01=**					

Model 3 combines the variables from Model 1 and Model 2 (full results are shown in Table 3). Like Models 1 and 2, the model is significant, and has an F-value of 44.89. The model has the highest adjusted R^2 of the three models, explaining over sixty percent of the variation with a value of 0.63. This suggests that the model explains more dependent variable variation than either Model 1 or 2. F-tests for model comparison, with null hypotheses that Model 3 is equal to Model 1 and Model 2, respectively, are each rejected with p-values of 0.000, meaning that Model 3 is a significantly better model at explaining the variation in the dependent variable.

Table 3: Model 3 Florida's and Economic Counter-Argument Variables					
Variables	Coefficient	Standardized Coefficient	95% Confidence Interval		VIF
coll90	0.225**	0.3463	0.1543	0.2957	2.14
foreignborn	0.1467**	0.2296	0.0874	0.2061	1.56
mfge8697pc	-0.0285**	-0.1203	-0.0467	-0.0103	1.07
techpole90	0.0021	0.0840	-0.0003	0.0045	1.63
unionrep90	-0.001**	-0.1581	-0.0015	-0.0005	1.35
mw	-0.0099**	-0.1531	-0.0156	-0.0042	1.40
cc98	0.3018**	0.3235	0.2093	0.3943	1.78
bohoidx90	0.0039	0.0337	-0.0074	0.0151	1.75
nmsa30	-0.0057	-0.0608	-0.0136	0.0022	1.27
pop90tt	0.0027	0.0740	-0.0011	0.0066	1.90
constant	0.2546**		0.2176	0.2917	
Sample Size	264				
F-value	44.89				
R2	0.6396				
Adjusted R2	0.6253				
p<.05=* p<.01=**					

As in Models 1, college-educated adults remain the primary indicator of inequality, with a standardized coefficient of 0.35. The creative class variable is the second largest predictor, with a standardized coefficient of 0.32. However, we fail to reject an F-test on college-educated adults and the creative class, where the null hypothesis is that the two variables are equal. This suggests that the creative class variable may not necessarily add to our understanding of inequality, and could reflect the criticisms of Florida's detractors,

who suggest that the creative class is nothing more than a fancy name for college-educated adults (Baris, 2003; Peck, 2005).

Two key changes between Models 1 and 2, and Model 3, stand out. The first is that TechPole is no longer significant. Since it was the weakest predictor of inequality in Model 1 and was barely significant, this is not entirely surprising, especially given the shortcomings of the variable. Yet it may suggest that, as previously mentioned, skill-biased technical change is not a determinant in the regional variation of inequality. The second is that international trade is the least important explanatory variable, dropping below unionization.

Taken together, the results indicate that Florida's creative class is a positive, significant indicator of inequality, though it is not the only one; indeed, the role of the creative class cannot be statistically distinguished from the role of the share of college-educated adults in predicting inequality in a region. But it is clear that it is not simply a division of labor that causes inequality; a decline in manufacturing was a significant predictor of inequality, and immigration appears to have strong role in local inequality. Furthermore, Florida's acceptance of inequality as unavoidable is not reflected in the models, given the strong performance of "old-fashioned" institutional variables such as the minimum wage and unionization.

SECTION VII
COMBATTING INEQUALITY THROUGH POLICY

The results from the models suggest that policymakers and activists in regions following a creative class strategy *can and should* take steps to ensure that the inequality associated with Florida's creative class is kept at bay. As cities adopt ever-popular creative class strategies, and blindly pursue high-tech companies and hip eateries, the adverse consequence of inequality must be considered. Local policymakers must remove their blinders and confront the "externality" of inequality head on.

The results from the regression model presented in this paper point to several paths that policymakers or activists can follow in an effort to reduce inequality. In the remaining sections of this paper, I will focus on three that I see as the most important. The first is to push for higher statewide minimum wages, through coalitions built around local living wage campaigns. The second is to support unionization strategies among the service industry, through training and outreach assistance. The third is to work with immigrant "work centers" towards the goal of integrating immigrants into local labor market institutions.[17]

[17] The somewhat weak performance of manufacturing suggests that the large incentive packages often offered to manufacturing companies may not have much impact on a region's inequality; I suggest that, when weighing incentive packages, localities seriously consider the wages these companies will offer, and whether they will help reduce inequality. Additionally, the insignificance of skill-biased technical change could indicate that the tide of technical change is one that is not worth fighting at the regional level, and that policy attention should be addressed elsewhere; more research should be conducted here.

Absent from this list is the suggestion to focus narrowly on higher education and more specifically, the attainment of college degrees by members of disadvantaged socio-economic groups. This omission is deliberate on my part, as human capital-focused solutions, in and of themselves, fail to address stagnating wages of many college-degree holders leading to the growing variance in income earned by college-educated adults (within-group inequality), as well as the growing underemployment of college educated youth in this country (Gottschalk, 1997; Livingstone, 1997).

Labor analysts have started to examine employment and wage trends more carefully in an effort to understand the limits of education-focused solutions. One hypothesis is that low-wage employers are requiring college credentials from workers to fill even the most basic of jobs. This suggests that the college-educated are working in an increasingly large share of the jobs in a metropolitan area, including jobs traditionally held by non-college-educated adults (Livingstone, 1997). This trend has two results that help to explain the relationship between the growing share of college-educated adults and urban inequality.

First, for less-educated workers, this "professionalization" of low-wage work results in even fewer employment opportunities. Furthermore, the employment opportunities that do exist are at now pushed down to the very lowest rung of the occupational ladder—this is because the jobs formerly reserved for less-educated workers are now reserved for educated workers with a college degree. This means that less-educated and less-skilled workers are competing for a smaller number of jobs, which in turn puts downward pressure on the wages at the bottom of the skill and educational distribution.

While this could suggest the need to promote college education and upskilling, this policy suggestion ignores a second emerging trend: underemployment of college-educated workers (Livingstone, 1997). Underemployment occurs when an employer requires a college degree for a job, yet the skills the worker acquired in college are never used in the job.[18] Underemployment could help explain the growing within-group inequality, where the wages of the college-educated are seeing ever larger variances since college-educated workers now occupy the top end of the "less-skilled" job distribution.

Finally, human capital-driven solutions, in and of themselves, ignore another very real danger: the potentially never-ending ratcheting up of educational requirements. That is, whereas in the past a worker needed an undergraduate degree for a specific job and in the even further past a worker needed only a high-school degree for that same job, in the future a worker may need a masters degree to work in the same occupation.

This could have severe implications for the question of who is getting a degree, and who is benefiting from the growing professionalization of work. Underemployment, within-group inequality, and the ratcheting-up of educational requirements may in turn result in fewer college-degrees for disadvantaged, low-income youth. This is because the costs of

[18] Both the professionalization and underemployment trends could be explained by the signaling argument, where employers do not necessarily want the skills that the employee possesses, but rather accept the college degree as a "signal" of intelligence or ability; those without the signal are largely assumed to not have this intelligence or ability.

education may outweigh their uncertain benefits (due to the increasing variance in skilled earnings). More research is clearly needed to fully understand the complex relationship between human capital investments and rising metropolitan inequality. Case-studies and case comparisons are also needed to understand the conditions under which education and retraining initiatives lead to improved earnings and quality job opportunities. Existing studies of this type often point to the need for combined or nested institutional supports—that is the strategic partnering of pro-labor and pro-education initiatives (Osterman, 1999; Lautch and Osterman, 1988; Howell, 1994, 2000). The remaining sections of this paper provide some insights into what these nested supports might look like.

Policy: Higher State Minimum Wages and well-structured "Living Wages"

As a start, the findings on minimum wages—that states with higher minimum wages have lower levels of inequality—suggest that regions should try and set higher state minimum wages. Unfortunately, outside of pushing state representatives for higher minimum wages, this leaves local actors with few policy avenues to pursue in this are. Furthermore, increasing the state minimum wage could be politically difficult, and could therefore be more of a long-term goal.

A living wage campaign may represent an alternative policy route, one that as we shall see is complementary to pushing for higher state minimum wages. A living wage is a wage rate, established by local legislation, which is set above the prevailing minimum wage in an area. Living wages differ from state minimum wages in that state minimum wages typically apply to *all* companies, whereas local living wages are usually limited to either government contractors, businesses seeking public assistance, and/or social service providers. Relative to either state or federal minimum wages, therefore, living wages reach far fewer low-wage workers; Brenner estimates that living wages reach less than one percent of workers in cities that have implemented them (Brenner, 2004). This makes living wage campaigns a bit of "paradox": living wage ordinances are easy to pass because they are limited in scope, but the tradeoff is that not many workers are covered by them (Bernstein, 2005).

To date, very few robust statistical studies have been conducted on the effects of living wages on raising the economic position of low-wage workers, in part because national data sets have limitations that preclude their use in living wage models.[19] However, case studies of living wages point to several key findings that are applicable to this study of inequality:

- Contrary to what conservative economists would predict, living wage laws have had relatively few adverse effects on employment; in fact, employment levels in some cases increased after the implementation of living wages (Brenner, 2004).

[19] See Bernstein (2005) and Brenner (2004) for discussion about these methodological constraints.

- Firm relocation in reaction to mandated higher wages is not a significant problem for living wages, since living wages are tied not the location of the business but to the location of the services provided (Brenner, 2004).
- The higher wages have not led to noticeable decreases in bids for city contracts; in some instances, bids have risen (Brenner, 2004).

These findings show that the passage of a living wage does *not* lead to doomsday scenarios of layoffs, firm flights, and unfilled city contracts that opponents often point to.

Two aspects of the living wage are critical in the development of a local minimum wage that can successfully meet the goal of reducing inequality. The first is the structure of the living wage legislation. The structure of the legislation determines both the scale of the coverage and the enforcement for violators. The second is the makeup and involvement of the coalition that pushes for the living wage. This is critical to: the success of the ordinance's passage; the ability to withstand intense anti-living wage pressure; the success of compliance and enforcement; and the likelihood of any possible future expansion in coverage.

Legislation

In terms of legislation, the broader the legislation is (in terms of affected sectors), the better the living wage will be at improving the lot of low-wage workers, thereby reducing inequality. City or County governments are often large and disjointed, and ensuring that workers in all of these divisions (both City employees and, for example, Parks and Recreation Department employees) are covered is essential, not only because it will ensure that as many workers as possible are covered, but because it will limit the amount of cross-departmental "shifting" that can occur in order to avoid the living wage.

Yet the living wage will never reach these workers if the municipality does not enforce it, making enforcement a critical piece of the legislation. The legislation must include budgets for city oversight, and clear punishments for companies who do not follow the living wage (Luce, 2005). Successful living wage legislation should also include provisions for educating workers about their rights under the new living wage law, and protections for whistleblowers who report companies that are not paying the living wage, so that workers who are getting paid below the wage are willing and able to report the violation. (Zabin and Martin, 1999).

Ultimately, the level of community involvement will determine the pressure and oversight placed on local government.

Coalition

The coalition that works towards legislation is critical in determining its ultimate success, since a living wage that has been developed with input from a broad-based, strong coalition is more likely to have a broader scope, and is more likely to include legislation for enforcement (Luce, 2005). Ideally, a living wage campaign coalition would involve the participation of labor, religious, community, and political groups (Bernstein, 2005; Zabin and Martin, 1999). This broad coalition would be able to achieve a hegemonic

"critical mass" against the typical anti-living wage groups (usually business associations), and would be better able to rally the support of voters or officials to pass the living wage legislation.

Yet the benefits of having a broad-based coalition are not limited to the passage of the initial living wage legislation. In writing about the declining power of union, Michael Piore writes that modern workers identify not as members of a particular *working* group or class, but as part of a *demographic* group (Piore 2002). This has been a key feature in declining worker solidarity. By including a diverse set of organizations in the living wage coalitions, the coalitions can effectively reach across lines of demographic self-identification without having to dismantle them. Their strength comes not from forcing workers and citizens to see themselves as homogeneous workers (a strategy that may or may not work), but from helping workers and citizens from a variety of backgrounds to see that they can work as one.

A good example of how living wage campaigns have the potential to flow upwards from the local level to exact state-level change is in Michigan, which recently passed a statewide minimum wage that will reach $7.40 an hour by 2008. Michigan has some of the oldest living wage laws in the country, beginning in cities and gradually expanding to counties. Though the Republican state legislature was opposed to increasing the state minimum wage above the federal level, they did so after a petition drive to put the minimum wage on the November ballot had collected over 150,000 signatures in the state, and appeared likely to succeed come November (ACORN, 2006).

The successful petition drive to put the issue on the ballot was led by the Association for Community Organization for Reform Now (ACORN),[20] the Michigan Democratic Party, labor organizations, community, and faith-based organizations. An economic justice organization was also instrumental in the campaign; living wages are fast becoming contested terrain, and increasingly require legal assistance to both write laws and hold off anti-living wage legal assaults (ACORN, 2006). To my knowledge, no formal case study of Michigan's recent successful effort to increase the minimum wage exists; the strategies used in Michigan and similar states around the country (from Arkansas to Maine) are clearly areas that need further research. However, it appears that the momentum built over the last eight years through local coalitions and living wage victories was instrumental in leading to the increase in the minimum wage, providing a clear example of the power of local action.

To some, implementing a living wage may seem like a small step in reducing inequality since it reaches so few workers; San Jose California currently has one of the highest living wages, but occupies the highest position on Florida's inequality index, showing all too clearly that living wages are not a panacea. Yet as the Michigan example shows, the passage of a living wage from a grassroots coalition is more than just the living wage: it is a step towards forming coalitions that can work towards larger, state-wide goals.

[20] ACORN is an international group of community organizations that is at the forefront of living wage movements.

In addition to focusing on increasing state (or even federal) minimum wages, successful coalitions can turn their attention to the future by focusing on expanding the local living wage to more sectors. In doing so, they can direct their attention to workplaces or sectors that are strategic targets for unionization (Zabin and Martin, 1999), key in our second policy. And the living wage coalitions can be critical in uniting immigrants with non-immigrant groups, critical for our third policy. The passage of local living wages, in conjunction with labor and immigrant movements, may ultimately lead to large-scale reductions in local inequality.

Policy: Unionization among the Service Industry

The results from the regression model indicate the unionization is successful at limiting inequality, suggesting that a second inequality-reducing policy area would be to push for unionization among the "armies or service workers" supporting the creative classes. Though unions have traditionally been associated with the manufacturing sector, the fastest growing unions are in the service sector, where wages are low and benefits rare—but where employment growth is expected to be high in the future. This expected growth could be especially high in creative cities, where, as a Silicon Valley commentator told the New York Times: "'[b]ehind every software engineer is a nanny or a food-service worker.'"(Stolarick, 2003; Florida, 2003). Ensuring that these nannies and food-service workers are paid wages and benefits that can support their households is critical to ensuring an equitable city, and unions may be one way to do this.

Yet unionization is often seen as something outside the arena of policymakers—indeed, unionization is seen as being outside the arena of policy in general, and instead in the arena of politics, making policies directly aimed at promoting unionization a bit of an anathema to policymakers who are trying to remain neutral. But given the strong performance of unions in limiting inequality, this is not an acceptable position to take; in the interest of reducing inequality, local actors—even if they are not actively encouraging unionization—must ensure that unions are at least given an equal playing field with employers. To ensure this, policymakers can follow three areas: including union-friendly policies in living wage campaigns, bringing unions and businesses together and helping them realize their joint benefits, and bringing unions together with immigrant working centers (the latter will be addressed in the next section).

<u>Unionization through Living Wage Legislation</u>

Legislation that is conducive to unionization should be included in living wage legislation. The first area of legislation would ensure that local governments do not contract out employment in order to avoid paying living wages by including "worker retention" legislation, which limits the ability to contract out labor to avoid the living wage. While this would obviously strengthen the living wage coverage, it would also ensure that unionized government jobs are not subcontracted to nonunionized, low-wage firms. The second area of legislation would be to include "labor peace" ordinances, which mandate that employers must remain neutral during unionization votes. This would ensure that employers not harass workers who are trying to unionize, or make

unionization difficult in other ways. Alone, each of these ordinances would be difficult to pass, yet they can successfully integrated into living wage legislation (Zabin and Martin, 1999).

Joint Benefits

The adversarial conditions in which unions and businesses often act are not mutually beneficial. While unions are often seen as simply demanding higher wages and benefits, they also have positive business aspects: they can help in training new and old workers, can operate effective screening processes for new workers, they can reduce turnover, and can ensure that patrons will be treated with care by a work crew with professional standards (Shaiken, 2004; Rothman, 2003; Waddoups, 2002).

In creative cities, where the creative class is spending their dollars in gourmet eateries and hip coffee shops, service and ambiance are key to attracting this fickle class. In another market where service and ambiance are key—Las Vegas—management in the hotel and gaming industry has formed a partnership with the unions. Since the quality of service separates the successful, profitable properties from those that are not, the major hotels and casinos in Las Vegas realized that their business depends on the benefits that unions can provide (Rothman, 2003).

Together, the unions and hotels created centers where both potential and existing employees can receive the training that makes them superior workers, able to provide superior service to hotel guests: current employees can improve and increase their skills, and the hotels can screen potential future employees as they are learning (Waddoups, 2001, 2002). The unions in Las Vegas cut down on hiring and training costs, and reduce turnover—making them cost effective, even with the higher wages and benefits (Rothman, 2003).

Perhaps most importantly in terms of inequality, the unions in Las Vegas played a "significant role" in keeping the hotel-casino workers above poverty wages, allowing them to function as middle-class members of society (Waddoups, 2001; Rothman, 2003). Without the unions, the training that allows the workers to be high-skilled and high-wage may not occur; in competitive environments like the Las Vegas gambling industry, hotels are unlikely to provide training to their workers for fear of "poaching" from other hotels. Thus without the unions, Las Vegas could be recognized not as a city with middle-class, high-skilled workers but as a city with poor, low-skilled workers.

While Las Vegas may seem like another world (and indeed is considered "uncreative" by Florida), unionization has also been successful in the most creative place—Silicon Valley. In the 1980s, the "Justice for Janitors" movement organized a largely immigrant subcontracting workforce, and in the early 1990s pushed Apple Computer into replacing its nonunion subcontracted janitors with union janitors, largely to "avoid damage to their public image" (Zlolniski, 1994). This gets at the interesting question proposed by Baris in her review of the Rise of the Creative Class: how can successful, creative regions draw on their creative base to "pressure firms into providing better wages and benefits for low-end service workers, therefore creating a potential path from creative economy success to

overall reduction of poverty" (Baris, 2003). With their focus on image and service, pressure on creative companies to hire union contractors or follow the norms set by unions could be successful. Companies like Whole Foods or CostCo do not pay higher wages or work with unions because of a deep empathy for their employees; they do it because it is good for business.

Policy: Integrate Immigrants into Community Groups, Educational Programs

Immigration emerged from the results as the third most important variable in determining inequality in a region. While some may interpret this result as a call to expel immigrants from the country, this would be misguided; it is the structure of the economy, with its emphasis on low-cost subcontracting under few enforced labor laws, which pulls immigrants into the economy. The answer then is not the expel immigrants, but to further pull them into the American economy through strengthened labor market institutions.

Immigrants, however, can be tricky to involve in formal labor market institutions, especially if they are undocumented. Yet it is not impossible. Janice Fine has documented the emergence of a new form of immigrant labor market institution: the worker center, which is a "community-based mediating institution that provide[s] support to low-wage workers," and where "…advocacy and organizing activities the priority." (Fine, 2006). Though originally formed by blacks in the American South to combat institutionalized racism, worker centers are now more identified with immigrant labor, which now constitutes almost eighty percent of worker center organizations.

Yet very few immigrant work centers have strong, ongoing relationships with unions. Of the working centers researched by Fine, only 15 percent had a strong, working relationship with unions. A whopping 82 percent had "occasional partnerships," while 3 percent had no partnerships with unions (Fine, 2006). Fine relates that immigrant work centers complained of having workplaces that wanted to organize, but that they couldn't find a union to help them do so (Fine, 2006). And when they did work together, they were not always successful at unionizing a firm—or of even getting to that late stage in the unionization process.

The lack of interaction between unions and immigrant work center is a serious concern. Yet the lack of coordination is not entirely surprising. Unions and immigrants have had a volatile past; unions have traditionally viewed immigrants as a threat to unions (since immigrants often work in the same sectors as unionized workers, though through informal arrangements and for very low wages), even though in the long-term immigrants could grow the ranks of union members (Briggs, 1998). This tension between the short-term and the long-term roles of immigrants has led to strains between immigrant groups and unions.

By not working with immigrant centers, however, unions may be limiting their long-term ability to protect the economic well being of the less-educated and less-skilled American worker. In an era when union membership is declining, this is a troubling sign of unions

still not being able to effectively work with immigrants—though again not entirely surprising. Fine relates that there is a "dramatic culture clash" that occurs between unions and immigrant activists at the worker centers. Immigrants at work centers claim that unions are "top-down, undemocratic, and disconnected from the community"; unions claim that the immigrants are unfamiliar with unionization laws, and are unrealistic about the time and efforts that are required to win a union drive (Fine, 2006). However, if the immigrant worker centers and labor organizations are involved as part of a broader coalition in a living wage campaign, these cultural "clashes" could be avoided: the living wage campaign could act as a "getting to know you" period, where the unions and immigrant work centers could learn each others norms and cultures.

There are working models that show how success can be accomplished. In Lowell, Massachussetts, the community group Coalition for a Better Acre (CBA), comprised of immigrants and minorities from one of Lowell's poorest and oldest immigrant neighborhoods (the Acre, with a poverty rate of over forty percent), acted in conjunction with local unions, the University of Massachusetts-Lowell (UMASS-Lowell), the Cambodian Mutual Assistance Association, and the Environmental Protection Agency (EPA) to integrate their residents into Lowell's redevelopment process of local brownfields. This is no small task; Lowell, the birthplace of America's textile industry, has one of the highest concentrations of brownfields in the United States, and most of these brownfields are in poor ethnic and minority communities.

One of the first and most ambitious steps in Lowell's redevelopment was the construction of both a ballpark and a hockey arena to house the city's minor league baseball and hockey teams (among other projects, including new housing and grocery stores on brownfields in the low-income neighborhoods). But rather than simply hire outside contractors or rely on cheap, unskilled labor in the redevelopment, the CBA and the EPA worked together with local Boston unions and UMASS-Lowell to train Acre residents in high-paying, high-skill environmental testing and construction jobs. Workers in the program were placed in apprenticeship programs with the local union, ensuring that they would have a good chance of long-term union jobs after the program's completion. In the end, Lowell's program brought good-quality jobs to some of Lowell's poorest residents, and integrated a long-standing immigrant community into the city redevelopment process (United States Environmental Protection Agency, 2002; National Institute of Environmental Health Services, 2000).

In terms of policy solutions, it is important to note that the local government in Lowell acted as the facilitator between the union and immigrant workers, brining the two together with EPA funding. In fact, the City of Lowell mandates that thirty percent of workers on brownfield remediation sites be local, further emphasizing their leading role in ensuring local economic development from redevelopment strategies (United States Environmental Protection Agency, 2002). And just like how in Las Vegas the hotels and unions saw the joint benefits of working together, in Lowell the city saw long-term economic development in the immigrant neighborhoods, the unions saw future well-trained members, and the immigrants were integrated into the unions and city development process ensuring them better economic opportunities.

The Lowell case is underscored by the fact that the city has been following a creative class strategy, actively luring artists and bohemians away from overpriced lofts and apartments in Cambridge and Boston to lofts, apartments, restaurants, galleries, and shops that fill the renovated mills along the canals and river (City of Lowell, 2006; Galvin, 2006). Indeed, it is the creative class strategy that has led Lowell to clean up its brownfields and redevelop its mills (Galvin, 2006). Clearly, creative redevelopment can work with both unions and immigrant communities and achieve joint benefits for all, and there is a way to have "creative class trickle down" with the active leadership of community, immigrant, and labor organizations.

SECTION VIII: CONCLUSION

This paper set out to answer three questions. First, is the creative class the sole predictor of inequality in metropolitan areas, or do factors and theories that frequently crop up in economic journals (such a skill-biased technical change, immigration, etc) better predict inequality? Second, is there a role for well-established labor market institutions to play in reducing inequality the creative economy? And third, based on the regression results and literature, what policies can local metropolitan areas undertake to lessen the impacts of inequality?

The regression models in this paper suggest that the creative class is not the sole predictor of inequality. Yet even though it is statistically indistinguishable from the share of college-educated adults in a metropolitan area, it is a strong and significant predictor of inequality. The results therefore seem to indicate that Florida is at least partially correct: inequality, it seems, does in fact go hand in hand with being a creative city.

This does not mean that we should be praising Florida for uncovering great insights into urban studies. Earlier insight by writers like Sassen, and the results from the models, suggests that there are deeper causes of inequality more endemic to our economy. The economic restructuring in cities—characterized by a declining manufacturing sector, weak labor market institutions, and a never-ending supply of immigrant labor—has allowed highly-paid professionals to live in a paradise of low-wage labor. Though the models in this paper cannot pinpoint this with certainty, it could be that the creative class has a spurious relationship with inequality: it is the economic restructuring that causes both the creative class and inequality, and not the creative class, absent of restructuring, causing inequality.

Yet the models and research suggest that there are viable policy solutions that cities following creative class strategies can adopt in order to limit inequality. The strong performance of higher state minimum wages and unions suggest that they are still relevant in today's economy; they are not the outdated, irrelevant institutions that Florida makes them out to be. And the performance of immigration does not necessarily point to the need for draconian immigration reforms; rather, it points to the need to incorporate immigrant communities into the larger labor market institutions, such as unions and living and minimum wage campaigns.

Whether academics approve or not, the creative class strategies are here to stay. Yet the striking overlap between being a creative city and being an unequal city is troubling not only in terms of ethical and political concerns, but also because if could have severe implications for the long-term sustainability of the economy. This all begs the question: is it possible to both reduce inequality and become a creative center? The answer, I propose, is yes: inequality is not an "externality," an unavoidable offshoot of the creative economy, as Florida says. Rather, inequality is the result of the underlying structure of the economy. Nor do the solutions to inequality lie within the creative class itself; telling the noncreative classes to follow a twisting, winner-takes-all path to creativity achieves little, if anything. Rather, broad-based coalitions comprised of faith-based, immigrant, labor, and political groups (in other words, groups comprised of both the creative and noncreative classes) must work together and push for local living wages, unionization, and the integration of immigrant groups.

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Appendix A: Richard Florida's Classes, by Occupation	
Class	Occupations
Creative Class	
Super-Creative Core	Computer and mathematical occupations
	Architecture and engineering occupations
	Life, physical, and social science occupations
	Education, training, and library occupations
	Arts, design, entertainment, sports, and media occupations
Creative Professionals	Management occupations
	Business and financial operations occupations
	Legal occupations
	Healthcare practitioners and technical occupations
	High-end sales and sales management
Working Class	Construction and extraction occupations
	Installation, maintenance, and repair occupations
	Production occupations
	Transportation and material moving occupations
Service Class	Health care support occupations
	Food preparation and food-service-related occupations
	Building and grounds cleaning and maintenance occupations
	Personal care and service occupations
	Low-end sales and related occupations
	Office and administrative support occupations
	Community and social services occupations
	Protective service occupations

Appendix B: Variables, Descriptions, and Sources				
Factor	**Measure**	**Symbol**	**Description**	**Source**
Earnings Inequality	Inequality Index	wi04	A ratio comparing creative to noncreative earnings in an MSA, using the Theil-T index. The indec is the sum of: the natural log of the ratio of the average earnings of each class to the average earnings of the MSA, multiplied by the proportion of the population that the class represents.	Richard Florida; BLS
Technology or Management Inducement	College Educated Adults	coll90	Percent of population aged 25 and older with at least a bachelor's degree in the MSA, 1990	Census
Immigration	Foreign Born Presence	foreignborn	Percent of the population that is foreign born, 1990	Census
International Trade	Manufacturing Sector	mfge8697pc	Percent change in MSA earnings from manufacturing, 1986-1997	BEA
Skill-biased Technical Change	Technology in an Economy	TechPole90	Combination of: MSA's high-tech industrial output as a percentage of total US high-tech industrial output; and the MSA's location quotient of high-tech industrial output, 1990	Richard Florida; Milken
Unionization	Union Representation	unionrep90	Percent of the workforce in the state that is represented by a union, 1990	BLS
Minimum Wage	State Minimum Wages	mw	State minimum wage, 2003 (check)	BLS, Individual States
Creative Division of Labor	Creative Class	cc98	Percent of MSA workforce in super-creative core and creative professional occupations, 1998	Richard Florida: BLS
Controls	Bohemian Index	bohoidx90	Location quotient for artistically creative people in MSA, 1990	Richard Florida: BLS
	Population	pop90tt	Population of the MSA in 1990, in thousands	Census
	Number of MSAs	nmsa30	Inclusive number of MSAs within 30 miles of target MSA	Census
BLS = Bureau of Labor Statistics, Census = US Census Bureau, BEA = Bureau of Economic Analysis, Milken = Milken Institute				
Thanks to Richard Florida and Kevin Stolarick for sharing their data for research purposes				

Appendix C: Descriptive Statistics						
Variables	Observations	Mean	Standard Deviation	Minimum	Maximum	Hypothesized Direction
wi04	264	0.3220	0.0427	0.2090	0.4570	NA
coll90	264	0.1941	0.0658	0.0077	0.4214	Positive
foreignborn	264	0.0645	0.0669	0.0065	0.4849	Positive
mfge8697pc	264	-0.1112	0.1803	-0.6760	0.5815	Negative
techpole90	264	0.4949	1.6996	0	20.17	Positive
mw	264	5.4633	0.6591	5.15	7.4	Negative
unionrep90	264	17.2364	6.7451	6.1	30.6	Negative
cc98	264	0.2743	0.0458	0.1503	0.4092	Positive
bohoidx90	264	0.9161	0.3737	0.23	2.9	Positive
pop90tt	264	0.7097	1.1503	0.0731	8.8782	NA
nmsa30	264	1.1629	0.4531	1	4	NA